R E P O R T R E S U M E S

ED 019 472 08 VT 004 194

THE DEVELOPMENT AND DEMONSTRATION OF UNIFIED VOCATIONAL-TECHNICAL EDUCATION PROGRAMS IN SMALL RURAL AREA HIGH SCHOOLS. FINAL REPORT OF PROJECT 601.

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REPORT NUMBER BR-5-0048 PUB DATE 67
CONTRACT OEC-5-85-111
EDRS PRICE MF-$0.25 HC-$0.72 16P.

DESCRIPTORS- *VOCATIONAL EDUCATION, *HIGH SCHOOLS, *RURAL SCHOOLS, PILOT PROJECTS, *SMALL SCHOOLS, GRADE 9, DEMONSTRATION PROGRAMS, *PREVOCATIONAL EDUCATION, PROGRAM DESCRIPTIONS, PROGRAM DEVELOPMENT, INSERVICE TEACHER EDUCATION, MICHIGAN,

THE MAJOR PURPOSE OF THIS PROJECT WAS TO IMPROVE THE QUALITY AND IMAGE OF VOCATIONAL EDUCATION IN RURAL SECONDARY SCHOOLS THROUGH THE USE OF INNOVATIVE CURRICULUMS. A 3-DAY PRESCHOOL WORKSHOP AND SEVERAL CONFERENCES FOR VOCATIONAL TEACHERS, COUNSELORS, AND ADMINISTRATORS FROM THREE PARTICIPATING SCHOOLS WERE HELD TO STUDY PROBLEMS IN IMPLEMENTING COURSES HAVING CONTENT COMMON TO SEVERAL OCCUPATIONS AND IN RESTRUCTURING THE CURRICULUM. SCHOOLS WERE GIVEN FREEDOM IN ADJUSTING SCHEDULES AND COURSES TO PROVIDE THE NECESSARY INSTRUCTION. ALL NINTH GRADE STUDENTS WERE ENCOURAGED TO ENROLL IN AN OCCUPATIONAL SURVEY COURSE TO ASSIST THEM IN CAREER AND EDUCATIONAL PLANNING BY INTERPRETING THEIR INTERESTS, APTITUDES, AND VOCATIONAL ABILITIES AND BY INTRODUCING THEM TO CAREERS IN MAJOR OCCUPATIONAL FIELDS. COMMON COMPETENCIES OF SEVERAL OCCUPATIONS WERE TAUGHT, AND SIMULATED WORK EXPERIENCE WAS SUBSTITUTED FOR SUPERVISED JOB EXPERIENCE WHERE WORK STATIONS WERE NOT AVAILABLE. DATA CONSISTING CHIEFLY OF INTELLIGENCE QUOTIENTS, GRADE ACHIEVEMENTS, AND INTERESTS AND APTITUDES MEASURED BY STANDARDIZED TESTS HAD NOT BEEN ANALYZED AT THIS REPORTING TIME. TENTATIVE CONCLUSIONS INDICATED ONLY TENDENCIES. FOR INSTANCE, IT APPEARED THAT MANY STUDENTS HAD BEEN EMPLOYED FOR PAY IN DOING VERY SIMPLE JOBS, AND VOCATIONAL CHOICES OR INTERESTS HAD NOT CONCENTRATED IN CLOSELY RELATED FIELDS. DURING THE SECOND YEAR, CLINICAL SCHOOLS WERE TO BE ENCOURAGED TO OFFER VOCATIONAL COURSES AND IN THE THIRD YEAR, THEY WERE TO TRY OUT A VARIETY OF WAYS TO SIMULATE OCCUPATIONAL WORK. (EM)

NOV 6 1967

ED019472

RESEARCH & DEVELOPMENT
PROGRAM IN VOCATIONAL
TECHNICAL EDUCATION
DEPARTMENT OF SECONDARY
EDUCATION & CURRICULUM
COLLEGE OF EDUCATION
MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN

VT004194

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A FINAL REPORT OF PROJECT 601

Contract OE5-85-111

This project will be continued during the period covered by contract OEG3-7-0702-11-2679.

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1967

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INTRODUCTION

Unified programs in vocational education are proposed for small rural[1] schools. Classes can be organized which enroll students who seek to develop common vocational skills for different occupations. General courses in vocational education[2] should be offered to develop basic vocational skills that beginning workers can use in a number of jobs while still enrolled in secondary education or immediately upon graduation when entering the world of work on a full-time basis. *Specific* occupational training will likely be obtained later in area schools and post-high school institutions and will enable workers to advance in an occupation or to change occupational fields when need arises.

PURPOSES

The major purpose of this research and development project is *to improve the vocational education of youth in rural communities.* Approximately 25% of students enrolled in the 5th grade will never complete high school and of those who do, less than half will continue formal education. Vocational education must, of necessity, start early in the life of youth if they are to be given vocational education while they are still in school. Vocational education based simply on occupational skills will result in persons being shallowly trained for the jobs which they will do as adults. Basic education in the sciences, English and mathematics will provide a sound background for basic vocational education.[3] The latter must be related to the world of work so that occupational skills will be effectively taught and marketable when youth seek jobs. Following such basic vocational education, specific job training[4] can be offered in the upper secondary grades or at post-high school levels by area schools and/or community colleges.

A major phase of this purpose is *to improve both the quality and the image of vocational education offered in secondary schools in rural areas* so that persons enrolled in vocational courses will have a status comparable to those who are enrolled in college preparatory courses. To accomplish this vocational education programs must be organized to develop understanding of basic principles found in work so that vocational students can learn skill on levels of performance that will make them employable. Improvement in quality of these programs would tend to insure that those students who later in life seek further education of a technical or professional character will have a basic vocational education to serve as a foundation for technical or professional goals.

To achieve the major purpose *the curriculum in public schools,* developed by administrators, teachers and state leadership, *will feature innovations* which seek to introduce more effective courses and more effective teaching techniques. These will be described further in the sections dealing with specific objectives. In-service education of teachers and others must parallel changes in programs to prepare teachers to teach the course content of these new programs. Persons actively engaged in teaching students on the high school level are qualified to develop new and different programs if directed and encouraged.

Finally it must be emphasized that the kind of vocational education that should be offered in small rural secondary schools is not in competition with the specialized training that will be offered in emerging area schools or in post-high school education offered either by secondary schools or by community colleges. Students enrolling in vocational or technical education programs at higher levels would have had instruction and occupational experience on the secondary level and instruction offered later in these educational programs could build on this initial learning. Furthermore, if such educational programs offered in the secondary school are prerequisite to instruction on higher levels, students should plan while in high school to continue their study.

OBJECTIVES

The major objective to be undertaken in the first year of the project is *to assist ninth grade students in tentatively planning their careers and educational programs.* A course including a broad survey of occupa-

1. A rural area is defined as a part of a state that is characterized by a sparse population where there is a small number of prospective students in vocational education and/or where students would have to travel long distances daily to area centers or schools offering the desired type of vocational education.

2. Vocational education is defined as that portion of an educational program which is designed to prepare, upgrade, or retrain persons for employment.

3. In this study basic vocational education is defined as that portion of secondary education which seeks to develop understanding of scientific, economic, and social principles and some selected skills that are basic to work done in several occupations.

4. Specific job training is defined as that phase of vocational education that prepares persons to do those jobs or skills on a level needed to begin work or advance in a specific occupation.

tions to acquaint them with occupational opportunities, an analysis of interests and an assessment of their aptitudes and vocational abilities is considered a prerequisite to the development of reliable plans. The survey course will help students in small rural communities know about occupations that are available to them in other communities. Many leave their home communities to find work elsewhere because of limited job opportunities at home, and they know little of job opportunities in the communities to which they migrate. Through this course students will have some introduction to careers in all of the major vocational fields, not only those that have been included in past programs of vocational education, but also those which may be offered when new emerging curricula such as, health or technical education are offered. The study of occupations is to be accompanied by an interpretation of students' measured interests, aptitudes, and vocational abilities so that each may have some concept of the occupational level which he may be able to attain. In present pilot schools different methods of organizing this course will be tried. In one, the teachers of the course will be guidance personnel who have been former vocational teachers. In a second school, the teachers of vocational subjects in the school will cooperate in directing the study of occupations to give students an understanding of the world of work. The guidance director of this school will administer a series of vocational interest and attitude inventories to students to supplement the testing program. Both vocational teachers and guidance personnel will assist students in planning their educational programs not only in high school but also in other schools where vocational education is offered. One additional variation not being currently offered in pilot schools but desired by many vocational teachers would arrange for all ninth grade students to study short units in nearly all of the vocational fields to give some concepts of vocational opportunities and the nature of work through an occupational information and exploratory experience program.

A second objective of the program is *to organize and teach courses covering competencies common to several occupations needed by students with different occupational goals.* This objective will capitalize on specific competencies of present teachers and enable them to teach interested students in larger classes than have been taught previously when different teachers taught similar content in small classes. Through in-service education vocational teachers were directed to study their present course offerings and identify those common areas of instruction[5] which might be taught in one course for vocational students preparing for different occupational fields when there are similarities in their initial work. Scheduling classes so that appropriate students will be available for such courses when taught by one of the vocational teachers or by a team of teachers may be a problem for principals. Plans for such courses will be developed during the latter half of the first year.

The third objective is *to utilize simulated work experiences as a substitute for supervised work experience where job stations are not available in the community.* The development of simulated work experiences is a formidable task and will require considerable creativity on the part of the teachers as they seek to incorporate the abilities that are developed in occupational experience programs. This work will be developed during the second year of the project. The use of a simulation game in the "Survey of Occupations" course suggests a pattern for such development. In addition to simulated work experience, work that is available in the communities for students to do, as well as work experience gained in school shops and laboratories, may provide some actual work experience which may be valuable as a way of preparing youth for work in these or closely related occupations.

RELATIONSHIP TO RESEARCH AND DEVELOPMENT PROGRAM

The Rural School Project is one of several projects which make up the Research and Development Program in vocational education at Michigan State University. Many problems encompassed in the Rural School Project are believed to be associated with small schools whether they are rural or not. Problems in small school systems which often have low economic resources are those inherent in providing vocational education for students in small classes, inadequate vocational classrooms, and often with poorly qualified teachers. Often these schools have not been able to offer vocational education programs because of a shortage of vocational teach-

5. Such areas of instruction will be organized in broad courses in vocational education to provide instruction in basic scientific, economic, social principles, and work common to a number of occupational fields and taught to students whose vocational goals are in different fields of vocational education.

ers. There is a need to schedule courses in which larger numbers of students may profitably enroll. Teachers in unified programs need to be more versatile than those who teach specialized courses. Internship programs may be needed to develop educators who can adequately fill the roles of teacher, counselor or coordinator in small schools.

The Research and Development Program in Vocational-Technical Education utilizes a clinical approach for

development of an internship pattern of teacher education,

improvement of vocational curriculum and administrative patterns,

allied research, instructional materials development and teacher education through seminars and institutes.

The Rural School Project is one of four curriculum projects; the other three being *A Study of a Block-Time Schedule for Teaching Vocational Office Practices, A Pilot Program Comparing Cooperative and Project Methods of Teaching Distributive Education* and *Hospitality Education Curriculum Development Project.* In addition the R & D Program includes an *Evaluation Systems for Local Programs of Vocational-Technical Education Project* and *Shared-Time Concept Project.* (See separate reports for details of these five other projects.)

The Rural School Project is probably more closely related to the Shared-Time Concept than any other single project. In sections of the state where area schools are being considered, students will attend classes of specific occupational training in area vocational schools but in most cases will return to their home high school for other high school courses. It seems likely in the beginning that some high school students will not take advantage, even if available, of area vocational schools. This school organization may not be quickly adopted in rural areas where the school population is sparse and distances great. In these schools the percentage of eligible students enrolling in vocational courses in area schools will likely vary. The success of programs will depend upon many factors including the relationship between vocational courses still offered in the home high school and the specific courses offered in the area schools. Some specific as well as basic vocational education courses will probably be offered in the home high school.

Excessive transportation costs, school dropouts and the number of students quitting school upon graduation from high school will provide justification for offering some vocational education courses in the home high school. Students will not attend area vocational schools until they are upperclassmen. Vocational courses which are designed to cover a cluster of jobs can more likely be justified in the home high school if the costs can be low enough to be borne by the small school.

It seems necessary to establish a very close working relationship between the home high school and the area school so that the patterns of attendance at both schools will result in continued education in the area school or other institution after graduation from the home high school.

BACKGROUND

Rural communities in Michigan, as in other sections of rural America, differ from urban areas in economic, social, and natural conditions. In rural areas where conditions have not been stimulated by industrial development, there is a tendency for the communities to remain static. In the early development of Michigan the natural resources were exploited and these areas today must be redeveloped. In geographic areas where food production is a primary occupation, the soil has not been depleted to the extent that forests and mines have been. In most rural areas population has actually declined. In competition with the industrial areas of the state, the rural areas have been and are still greatly disadvantaged. The productive ability of workers in rural areas has greatly increased in the century. However, man's productivity limited by slow natural growth falls short of that of workers where mechanical power and automation augment human labor. Hence workers in rural areas are still economically disadvantaged when compared with workers in the industrial parts of the State. This will continue as long as we do not have means by which the workers in rural areas are able to produce goods and materials and provide services as rapidly or economically as those in the urban communities. Even at best it is not expected that the natural production of goods can ever compete successfully with mechanical production.

Schools in rural areas are further handicapped by the lack of economic development. With meager economic resources behind each student, schools have not been able to provide adequate types of

vocational education. Additional costs are necessary to provide programs similar to those found desirable in good programs of vocational education. Much will have to be done to bring vocational education up to its potential in rural high schools. This lag, if allowed to continue, will make for greater inequalities between the workers and between the economic conditions in each area.

Michigan is not greatly different from other states in this regard. Farming in this state is similar to that found in other parts of the country. Northern Michigan has much land that is not adapted to intensive food production. As Michigan seeks to serve its people in developing vocational education under a variety of conditions, its developing vocational programs seem to be applicable to other States where similar conditions prevail. Vocational education to serve people in rural areas is an important educational problem not only for rural people but for educational leaders in the State as a whole.

The Rural School Project is a pilot program adapted to small high schools. In rural areas the distance between schools as well as the distance from home to school is relatively great, not only in miles but also in time of travel. The sparsity of students necessitates long bus routes which force some students to ride on buses as much as an hour and a half to two hours to reach school. Rural educators realize the strain on rural youth who spend two or three hours a day on school buses and feel that additional daily travel to area schools may become unbearable.

In the past, small enrollments and few electives in most rural high schools often resulted in many students enrolling in any vocational course offered, rather than college preparatory courses. The value of specific vocational courses to students with different occupational goals is very limited. The need for vocational courses that meet the needs of students for initial entry into different occupations is great. Often the initial work will require general skills or competencies and basic understanding of scientific, economic and social principles which are applicable to work in several different occupations.

Since there is a relatively large percentage of students who terminate their formal education with high school graduation, there is still a great need to offer basic vocational education in the lower high school grades. Specific vocational education programs should not be offered until students have taken a series of basic courses, both vocational and academic, to secure a broad foundation for later specialization. It is sound practice in education to encourage students to develop a strong background before enrolling in specialized courses. This practice is particularly appropriate for persons who prepare for the modern world of work where change dominates and workers are forced to prepare frequently for new types of work.

In the small rural schools the curriculum must be developed to provide basic vocational education for clusters of jobs. Area schools can offer the specialized vocational education courses which enable students to be more highly qualified for specific work. If these specialized courses are offered on the high school level in area schools and community colleges, students may be enrolled in both the home high school and in the area school on a shared-time basis.

The number of job opportunities in food sales and service occupations in the tourist areas may increase rapidly as areas develop this particular resource to strengthen the economic condition. Even so it is recognized that the number of job opportunities is limited and the school can not expect to find work stations for all the students who might wish to secure occupational experience in their high school program. However, the schools involved in this project will capitalize on any opportunity that is available in the community as well as those which may be developed in and around the school as a means of providing occupational experience in addition to that which will be provided through simulated work experience.

One underlying objective of the Rural School Project is the improvement of instructional programs in the total school. All teachers in the high school will be involved in the curriculum study that will parallel the revisions and development of new courses in vocational education. To be more effective in instructional programs a closer relationship between the academic and vocational courses is needed. As an example, the relationship between science and agriculture, science and shop, and science and home economics must be capitalized upon in planning and scheduling classes. Improved instruction can be realized if the students in science classes can also be concurrently enrolled in shop or agricultural classes so that the principles taught in science courses can be illustrated and applied to shop and agricultural laboratory work.

The teacher preparation and subsequent in-service education of teachers offered in the College of Education must be geared to the Rural School Project if the changes which are developed and found successful are to be replicated in other school systems.

THE DESIGN OF THE PROJECT

ATTAINMENT OF OBJECTIVES. In planning and teaching the course, Survey of Occupations, the schools were given considerable freedom in its organization. In general they were encouraged to use a variety of techniques to acquaint the students with the world of work, such as field trips, taped interviews with personnel managers, reference material, outside speakers from business and industry, work experience in the school laboratories, interviews with workers, films, and slides. The first part of the school year was chosen as a time to give an overview of business and industry. This was to be followed by a period of time devoted to the nature of work which persons do within industry. It may be observed that the competencies of workers in many areas are the same in several businesses and industries. The type of work done by the different workers will give clues to the kind of educational program students should undertake to prepare themselves for work in the particular industry or business in which they become interested.

Many schools have test results which indicate the achievement level of their students. In addition most of them have given interest inventories, aptitude tests, and other measures of ability which may be used by students in helping them to determine their future careers based upon capabilities. However, this is often not true in small rural high schools. Where such data were not available in pilot schools, tests were given as a part of the project. Guidance directors were suggested as being more capable than teachers to give and interpret the tests so that students would have these measures of interests and aptitudes to supplement information pertaining to ability and achievement.

After students had secured a better understanding of themselves as measured by tests, they were encouraged to capitalize on their interests and aptitudes by making tentative choices of careers in which they might engage. This choice was to become the basis for planning their careers and the education necessary to achieve their occupational goals. Finally, an analysis of programs that students set for themselves gives school personnel some indication of the kinds of courses that should be offered in the high school. If the occupational goals of students are those which require study beyond high school, they also need to know what further education is necessary. Making plans for such education is also a goal of this particular course.

To evaluate the outcomes of this introductory course various types of measurements are being considered: (1) to determine if students have selected tentative occupations which are closely related so that they may enroll in courses of instruction that can adequately prepare them to obtain entry into any of these occupations; (2) to determine if their choices have been made on reasonable interpretation of capabilities and the likelihood of obtaining work in the field of their choices; and (3) to measure their success in early work in chosen fields. These latter evaluations obviously cannot be completed within the time span of this project.

To attain the goal of offering courses in high school which covered content common to several occupations, it is necessary to have the teachers engage in curriculum study. This will be done through an in-service education program in which either they will be encouraged to enroll in graduate courses in Curriculum and/or to work together as a group to determine the common elements in courses that they are presently teaching. When these areas, taught by several of the vocational teachers are identified, a new organization of course content will be possible. Research assistants assigned to the Rural Schools Project sought to develop the content of courses through conferences with University specialists and utilization of ideas provided orally or in printed materials.

In addition to this method of course revision, teachers were encouraged to combine in a single course those closely related units which in the past have been taught in different years to maintain a continuing interest and to offer the instruction at the maturity level of the students involved. When specific content areas in different vocational fields are offered in major units or in a single semester, students with different vocational goals who wish specific subject matter may enroll in these intensive courses more easily than when it is integrated in several semester offerings. This suggestion violates a common curriculum practice of integrating instruction so that many areas may be related to the current supervised work experience of the students. This organization may violate the principle of offering the subject matter when students have reached a desired vocational readiness or have taken other basic courses which would give them background for this course.

The advantages of offering all of the subject

matter in a single course seems to outweigh the advantages of offering the instructional material in several different years. This change in practice is a difficult one for teachers to make because they have organized their courses and taught them over a period of years using an integrated approach. Such changes must be made to fill the needs of other students for obtaining the same instruction which has been given by the teacher of the specific vocational subject to a limited number of students.

The career choices made by 9th grade students in the Occupational Survey Course will help pinpoint the interests and needs of students for such instruction. Furthermore, teachers working together could plan a better vocational education program in which the students have opportunities to enroll in courses or short units taught by vocational teachers in other fields as a part of their vocational education program.

EVALUATION OF ACCOMPLISHMENTS. In evaluation of this phase of the project it is impossible to determine in the pilot schools whether the students who were enrolled in these new courses were better prepared than previously when the content was offered by several vocational teachers for students majoring in their specific vocational programs. It will be possible, however, to compare these students with students in control schools where the information taught and the abilities developed can be evaluated and a determination made as to whether students are better prepared in specialized courses than in integrated courses.

One major difficulty teachers face in having students with different backgrounds and occupational goals in the same course will be relating instruction to the work for which they are preparing. This may be offset in part by having students working on individual projects and making contacts with employers or persons in the community who may also serve as contacts to gain the specific applications of the principles taught to their work.

The development of similated work experience as a substitute for supervised occupational experience programs offers a challenge to teachers in rural areas where few job stations are available for students. Simulation games are being used in career planning and it would seem possible to develop such games and other kinds of work experience that might be organized and made a part of the classroom instruction to achieve some of the goals that are gained in the occupational work experience program. The development of these games and their refinement to make them as effective as actual work experience will require considerable creativity on the part of teachers and project leaders.

In evaluating these activities it will be possible to compare some students who do not have the opportunity of actual work experience even in the small rural community. The evaluation must not be based alone on the understanding of the business but must be based upon the attitudes of the student and his relationship to the business which he would gain in an actual work experience program. If there are few opportunities for an occupational work experience in the community, it will be necessary to compare students who have been involved in the simulated work experience with those who have been in actual occupational work experience in other communities.

STAFFING REQUIRED. It is obvious that the schools will need to have additional help in developing both the course materials and the simulation models in order to carry on effectively this phase of the project. Evaluation instruments will also need to be constructed which may be used in determining the outcomes of these two objectives of the project. Not only will this involve the work of the project director but consultants must be used and graduate students or other curriculum persons employed to develop the material that will be necessary for the success of the project or to find these instruments in other research that is being undertaken. Although teachers will need to be involved in the development of both the curriculum materials and the evaluation instruments, they must have the help of resource persons not readily available to them in a rural community in order to produce a high quality of work.

ACTIVITIES AND PROGRESS

COOPERATING SCHOOLS. Descriptive Data. Schools which were invited to serve as clinics in the Rural Schools Project are located in rural areas of the state. The selected areas have a less dense population and the distance between towns or cities is often much greater than that found in other areas considered rural. Such areas are found predominantly in the Northern part of lower Michigan and in the Upper Peninsula. These areas are considered typical of many rural areas in other states. They are not greatly different from other rural areas

in Michigan where farming is still a major economic industry.

Four schools were chosen for the first year since the director was on sabbatical leave and not able to contact other schools and solicit their participation. Only three participated, namely Onaway, Crystal Falls and Felch-Channing. The major considerations in the selection of these schools were: (1) the observed interest of administrators and teachers in vocational education, (2) the limited ability to finance education in the respective communities, (3) the inability to offer reimbursed programs either because of lack of qualified teachers, lack of adequate facilities and equipment or the lack of potential students in possible programs because of smallness of schools.

The largest of the three schools based on high school enrollment was Onaway. The enrollment of 330 makes this school, as well as Crystal Falls with 285 high school students, larger than many schools in western states. However, these schools are considered small by standards which have been recommended by Conant. Although the introduction of area vocational centers or area schools is being considered, there will be problems of organization and administration which may delay or prohibit the adaptation of patterns being considered in the more densely populated areas of Michigan. In each case there is need to offer vocational education programs on lower grade levels in high school before specific occupational training is provided in post-high or area schools.

Vocational Programs. Only reimbursed programs in vocational agriculture and vocational home economics are available in the three school systems. Crystal Falls has vocational home economics and Felch-Channing has a vocational agriculture program. Onaway has both.

In all schools courses in typing, shorthand and bookkeeping are being offered. These offer the best possibility for becoming reimbursed courses in these schools. Some of the present teachers lack occupational experience. Some teachers who are relatively young may seek to become qualified through the procedures that are available in Michigan. The utilization of specially certified teachers may enable programs to reach the quality and character of reimbursed programs.

Some shop work is being offered as industrial arts in the schools. A teacher who is qualified through collegiate training and experienced in electronics is being hired at Crystal Falls. The teachers in other clinic schools and other teachers in the Crystal Falls schools have limited occupational experience. Some are interested in becoming certified for vocational programs, if they can meet the standards prevailing in Michigan. Through in-service education programs the quality and the nature of courses offered in the trades and industry field will be revised so that basic vocational education may be offered to prepare students for specialized courses which may be available to them in area schools or centers and to prepare them for occupational experience programs.

ROLE OF THE SCHOOL. Space and Equipment. No specific changes have been made in the school buildings with the introduction of the program. The development of the course "Survey of Occupations" has utilized regular classrooms except when students from several classes in one high school have attended a session designed to present a resource person or a film to all classes at one time.

Additional occupational information has been secured by the schools or supplied as reference materials for teachers and students. The Guidance Office has expanded its library facilities to make these resources available to counselors as well as teachers and students.

Selection of Students. All ninth grade students in cooperating schools have been encouraged to enroll in the course "Survey of Occupations". Although students had made choices of elective courses for the current year and thus made a tentative choice from the various curricula offered in the school, most students still were enrolled. Individual counseling and the use made of personal data obtained from intelligence or achievement tests as well as vocational interest, aptitude and aspiration tests enabled these students to consider more objectively, how they would prepare themselves through education for their occupational careers. Students capable of preparing for careers requiring baccalaureate or advanced degrees can benefit from career and educational planning as well as those who may terminate their formal education earlier. It was assumed that these same students would benefit from vocational courses and subsequent occupational work experiences related to career objectives requiring collegiate instruction.

Utilization of Materials. In the early stages the Rural School Project was considered a developmental activity. The general objectives of the project were outlined and school personnel have considered how these objectives may be implemented in their respective school systems. During the first year

differences in teaching techniques, organization of classes, materials used in instruction and teaching personnel have been accepted as they existed in the schools. Data will be obtained at the end of the school year to evaluate the variables found in different school programs. The practices used will be studied by each school system in relation to general objectives of the project. Practices used in other clinical schools will be considered in refining the techniques to be used in offering the course "Survey of Occupations" for the second year.

The materials used in instruction will be carefully evaluated by the teachers. Valuable materials utilized in one school will be secured by the other schools. The instructional program and the related activities of class members in all pilot schools will be improved and the educational outcomes will be improved as a result of the varied practices and materials tried during the developmental phase.

Advisory Committees. In a memorandum of agreement each school was asked to establish an advisory committee for various activities undertaken. These committees have served as a sounding board for plans developed in offering the "Survey of Occupations" course. Committee members have served as resource persons in class activities and as consultants to teachers and students interested in the occupations represented by the committee members. Community people are involved in counseling students as they conceive and make initial plans for their careers and the educational plans needed to accomplish the long range goals.

COOPERATING AGENCIES A major source of cooperation in the designing of the project has been personnel of the Vocational Division of the Michigan Department of Education. Mr. Leon Alger, Director of Program Development, and Mr. Charles Langdon, Director of the Research Coordinating Unit, were contacted in the planning. Since the project is designed to cut across the present vocational fields, those persons whose staff assignments enable them to look more objectively at the total program than those serving one vocational field were consulted. They have been continuously called upon as problems have been encountered relative to development. Mr. Robert Pangman, working in the area of program development and primarily assigned to the area school program, has also served as a resource person in a workshop and as a consultant to participating teachers. Other staff members in the Vocational Division of the Michigan Department of Education who have responsibilities in working with the schools have been contacted for information relative to the programs that are currently approved for reimbursement. In some instances the number of reimbursed programs in a school is much less than the number of teachers teaching courses considered prevocational.

A related research project has been initiated by Mr. Donald Stormer of the University of Wisconsin for his doctoral dissertation. He has selected control schools and will be collecting data regarding the school populations similar to that which will be obtained from the pupils in the Rural School Project. Findings will be analyzed to discover any differences in attitudes and maturity of choices in regard to career planning in the project schools as compared to students in control schools.

WORKSHOPS AND CONFERENCES. There was only a limited amount of time available for contact with teachers prior to the close of the 1965-66 school year. A three-day pre-school conference was held in Crystal Falls for vocational teachers, counselors and administrators from the Crystal Falls and Felch-Channing Schools. The director of the project was assisted by Robert W. Boeck, a research assistant in Office Education, and two consultants, Mr. Dale McAlvey, Director of Vocational Education at Petosky, Michigan and Mr. Donald Baker, Assistant Superintendent at Onaway, Michigan.

Objectives. The purposes for this workshop were outlined as follows:

1. To develop a philosophy of vocational education that will be a foundation for curricula developed for high school students.
2. To develop general objectives for vocational education and to formulate specific objectives for courses offered.
3. To study the area school report and determine the educational implications of findings and recommendations for vocational education in public schools.
4. To study present occupational opportunities outside the area and relate them to occupational choices reported for present high school students.
5. To plan the units about occupations and student capabilities so that each may intelligently plan his career and his educational program.
6. To study sources of materials which will serve as background material for instruction in vocational education.

7. To identify the kinds of data needed to appraise the educational growth of students in vocational education.
   a. Vocational competency
   b. Vocational maturity
   c. Personal maturity
8. To discover the kinds of instructional materials needed to teach effectively the course in occupations.

Each school contributed information about its student guidance program, including personal data on tests given to each student. The vocational teachers brought information about their course offerings and content. The area study was reviewed not only to relate to recommendations which had become a matter of record but also to review data pertaining to the occupations which were found in the area. The occupational preferences of high school students were compared with the expectations of their parents. These data were to become information that would be presented to ninth grade students.

The organization of the course dealing with occupations, career planning and educational planning was considered in some detail with commitments being made regarding the scheduling, leaving details to teachers involved in its presentation. A review of the present courses which had some vocational characteristics, although not presently reimbursed, was followed with consideration of changes in the curriculum that seemed desirable to teachers. Curriculum study became the center of focus through organized class instruction or committee work. A follow-up meeting provided opportunity for teachers and administrators to discuss the proposals further and set the stage for later implementation.

The schedule for a similar program of conferences was scheduled in the Onaway school system. Two days were scheduled in October when teachers and guidance personnel from the Upper Peninsula schools met with those from the Onaway schools. Progress reports were made, data from standardized tests which had been given and information obtained from students were presented. The consideration of other data that might be obtained by a companion study of vocational maturity, aspirations of students and parents, and perceptions of occupations was considered and plans were undertaken to cooperate with this study. An organized course in "Curriculum" was offered for the Onaway teachers and others by Michigan State University which served as a background for a workshop which was held in late November to plan and implement changes in the curriculum. This later objective was to become a major point in the curriculum study carried on by school committees during the remainder of the school year.

Consultants. Research assistants participated in these conferences as well as four consultants: (1) Mr. Robert Pangman of the Vocational Division of Michigan Department of Education, a consultant on Area Schools, provided information regarding the area school development in Michigan and teacher certification. (2) Dr. Robert Anderson of the Community Development Service of Michigan State University described some of the work done in the Traverse City area by the Agricultural Extension Service to provide rural youth and their parents with information about occupations to assist the youth in planning their careers. (3) Mr. Donald Stormer, a state leader in the Wisconsin 4-H Club program discussed theories in career development and a proposal for studying changes in ninth grade students who were enrolled in occupational study and career planning. (4) Dr. Dan McLaughlin, Director of Worker Training Programs in Dow Chemical Company, served as instructor of the graduate course in curriculum and as a consultant in curriculum development in the November Workshop.

Outcomes. Although many problems in implementing the courses and in restructuring the curriculum were studied in detail, no firm commitments were made by the schools before the conference's close. The first year of the Rural School Project was considered a pilot program and schools were given freedom in adjusting their schedules and courses to provide for the instruction desired. In each case teachers continued to work on outlines and instructional plans after the conference. In Onaway a class for ninth grade students was offered and 90 per cent of the students were enrolled in two concurrent classes which were offered. In Crystal Falls two shop teachers and one home economics teacher who taught classes in which all ninth grade students were enrolled arranged bi-weekly sessions for all ninth grade students to provide an overview of the major occupations. These sessions utilized films or speakers from the community or other sources. In the Felch-Channing school the teacher of vocational agriculture and guidance counselor planned to offer similar instruction for ninth grade students. In the Upper Peninsula schools teachers provided occupational information whenever appropriate to relate skills or understanding to the occupational opportunities in their fields.

MATERIALS. Time was not available to prepare new content for courses. The libraries were surveyed to find appropriate bibliographical materials that could be used by students. A National Forum Guidance and Personal Development Test *Planning Your Career* was obtained for each student in the Onaway school. Free occupational publications were solicited for supplementary references. Others were purchased such as *Dictionary of Occupational Titles*, *The Occupational Handbook* and the *Occupational Outlook Quarterly* for schools which did not have these publications. A "Career Planning" game was ordered for each school to teach students to make career plans on the basis of information pertaining to specific cases and data pertaining to occupational opportunities. Only two games were received with others to be mailed at a later date. Teachers agreed to continue to secure other teaching materials as they found references to them.

DATA COLLECTION. The data that have been obtained to this date pertain primarily to students enrolled in the Occupational Survey Course. The data have been taken from the students' records in the guidance file and have been those which teachers need to make them better acquainted with the students. In addition, teachers have obtained from the students other kinds of personal information. The types of information from the files are intelligence quotients, grade achievement as measured by a standard Stanford Achievement Test which lists scores and grade levels, the Kuder Interest Inventory and Differential Aptitude Scores.

The analysis of these data has not been undertaken to date, except to group students based upon their intelligence test information and on their grade level achievement. This information is compiled on simple data sheets so that the teacher can check quickly to obtain information about students in class. The test scores and the personal information which teachers have obtained on students have been tabulated so that one may quickly see such information as the work experiences of students, family background, the occupation of the parents, and the students' preliminary choices of occupations for their careers.

Tentative conclusions at this time are very general in nature and indicate only tendencies which seem to pertain to the students in any one school. For example, it appears that many students have been employed for pay by persons other than their own family in doing very simple jobs. A second example is that students' vocational choices or interests at the moment have not concentrated in closely related fields.

A review of the total project was undertaken in November when consultants, Mr. Max Amberson of Montana, Dr. Raymond Agan of Kansas, and Dr. William Hull of Oklahoma were invited to the Michigan State University campus to study and evaluate the plans and initial accomplishments of the project. These men were qualified for this undertaking by experience in conducting similar pilot programs and/or by an interest in replicating the project in their states. Additional interest has been generated in the project since it was reported in a brochure, *A Developmental Vocational Education and Teacher Education Program Based on A Clinical School Concept,* which was distributed at American Vocational Association Convention in Denver, Colorado, in December 1966.

THE FUTURE

TEACHER EDUCATION. It has been reported that a need for teacher education was identified and a limited effort was undertaken during the first year of the project. A more extensive program might have been provided if more schools, relatively adjacent, with teachers interested in qualifying for vocational certificates had been available.

An increase in the number of participating schools within small geographic areas to increase the clientele for professional improvement classes is being considered. Teachers can expect to benefit from this through additional salary and programs will be enriched through better organization and content.

In addition to credit courses, workshops will be organized in each cluster of schools to improve the content of new or revised courses and to improve the methods used in teaching. Vocational courses to be developed are those which enroll students with different vocational objectives, but with common content. Courses to be developed in 1966-67, to be taught in 1967-68 will include Business Management; Power Mechanics; Health and Disease Prevention; Nutrition, Food Production, and Processing; and Salesmanship and Public Relations.

Some of these newly developed courses will be offered in participating high schools later in 1966-67 while others will be delayed until adequate instructional and reference materials are found or prepared.

Few conferences involving other schools will be

held in the second year of the project. Two types may be appropriate: one might include persons from mid-western states who have had responsibilities for offering courses similar to the occupational survey and career planning course offered in participating schools. The second might be for those interested in offering such a course in the future. Teachers in participating schools could report their experiences and significant data and offer suggestions for the organization and teaching of this course. However, the latter types of conferences will be postponed for another year until the courses offered have been improved in light of evaluation of different methods or organization.

PILOT SCHOOLS. When consultants from Kansas, Montana, and Oklahoma were brought in to evaluate the plans and accomplishments to date, it became apparent that small schools in Michigan would be considered relatively large in those states. Although the upper limit for pilot schools had been set at 325 students in grades 9-12, it was easier to find schools that approached the upper limit than to find schools more comparable to high schools in midwestern states. In order to determine the adequacy of innovations for different sized small schools, high schools located near the 1966-67 participating schools with enrollments around 175 and 250 students are being sought. A minimum of three different sized schools was planned for each small geographic area. The diameter of such clusters of schools was arbitrarily set at about 40 miles. The number of schools participating in the Project was hopefully set at 6-12 with probably no more than three clusters. One of the areas to be added will be from a section of the state that is more agriculturally productive.

Other factors in addition to size of school will be considered to equate the population. Socio-economic data, school achievement, and ethnic factors will be obtained to identify possible sources of variance.

DATA COLLECTION AND ANALYSIS. The first year of the project features a pilot program for methods of offering a course in occupations and career planning. In the second year, clinical schools will be encouraged to offer vocational courses which can provide vocational education for students preparing for occupations in several fields. Finally in the third year, the schools will try out a variety of ways to simulate occupational work. In each pilot effort there will be a need to gather data which will measure the growth of students in vocational competencies in specific occupations. The development of such instruments will be a gigantic task, for in many cases it will require tests and other measures for single or small groups of students. There will be certain types of tests which can be used with larger groups of students. Even for them instruments are not available and will need to be developed as experience is gained in developing and teaching these courses.

Teacher-made tests will be developed and carefully evaluated throughout each school year. Schools will make use of check lists and observations commonly used to measure the growth of students. All kinds of evaluation forms used in occupational experience programs will be studied to apply them to the evaluation of students participating in simulated experiences.

The students who have gained occupational experience through simulated activities must be compared with those who have had occupational experiences as a learning device. Experimental research techniques will be used to evaluate the effectiveness of stimulation.

Cooperating schools need much financial support to underwrite their contributions to the joint effort to develop methods of providing vocational education in small communities or small school systems that have not received adequate financial support for vocational education programs. They will be given help in developing proposals for support of plans which they wish to undertake. Their efforts which may be supported by grants from different sources will be coordinated to obtain maximum returns from all efforts.

Graduate students may wish to develop dissertations closely related to the development of unified programs of vocational education. If small grants can be secured for their dissertations, these can contribute to the development of such programs.

MATERIALS TO BE DEVELOPED. In addition to the development of evaluation instruments, plans for unified courses and simulation experiences must be prepared. These will be developed by teachers and research assistants under the direction of consultants and others who will be obtained to guide the efforts of those devoting time to the Project.

PLANS FOR DISSEMINATION. In the original proposal outlining this project three phases were identified: (1) the planning and pilot stage, (2) the training phase, and (3) the demonstration phase. There is overlapping in the first and second phases. Training must parallel the pilot efforts of teachers and local

leaders. Since the different innovations are not being introduced at the same time, the planning and pilot phase for one innovation will be running concurrently with the demonstration phase for the first innovation. Dissemination of results and the nature of programs will be provided in connection with the demonstration phases whenever they are carried out.

REPLICATIONS AND IMPROVEMENTS. At the close of one year's experience with an innovation, program leaders or participants will be directed to analyze and evaluate their programs so that these may be compared and the values of each feature may be used to refine the techniques used in any of the programs. There will be less difference between pilot programs in cooperating schools a second year. A revised plan will evolve which will consolidate the desirable features from each of the schools. This plan will become a guide for other schools seeking to replicate any innovation being tried in the pilot schools.

There is considerable interest from other states in developing unified programs of vocational education. It is hoped that schools in several states will develop similar pilot programs which can be compared.

WORKSHOPS AND CONFERENCES. Each year as any innovation is introduced, there is a need to offer in-service education. This may be organized as graduate work or as professional improvement for those not interested in degrees or vocational certification. It is possible to help individual teachers for graduate work through independent study.

In addition, during the demonstration phase, conferences will be held at which time schools will be invited to see programs being carried out and to learn of the outcomes of such educational innovations. Of necessity these must be offered over a two or three year period to show the growth that is achieved by students at different points in the program. It is hoped that the clinical school personnel may serve as consultants to schools introducing one or more of the innovations in their vocational education programs.

MATERIALS. Any material developed for use in the clinical schools must be revised in light of the outcomes obtained in various schools. When a program is in the demonstration phase, there must be available publications which report the results of research that paralleled the development of the program and that provides a guide for schools as they introduce the program in their vocational curricula. This will require staff who have the time for writing such publications and who have the time to work closely with clinical schools to observe and to consult with vocational education personnel.